

## Notes on the Lepidoptera of the Scottish Highlands.

By DOROTHY J. JACKSON.

Last year, 1910, I spent most of the fine days of spring and late summer collecting Lepidoptera in various localities in Ross-shire and Inverness-shire, and thus came across many species which seem to be worth recording for these counties. A few days of brilliant sunshine occurred in the end of March, and the first of these, the 29th, I spent in the birch woods at the Rogie Falls near Strathpeffer (Ross-shire). Here *Amphisa prodromana* was taken flitting about over heather and withered bracken, and several specimens of *Brephos parthenias* were noticed flying actively, and often at a considerable height, amongst the birch trees. This species (*A. prodromana*) appears to be quite common in these open heath-carpeted woods, for I took it again next day at Kilmorack, near Beauly. Here it was much attracted by the pools of water in the marshy places beneath the birch trees, pausing beside them for a few moments in its quick erratic flight. In both these localities *Semioscopis avellanella* was fairly common on the trunks of the birch trees; and *Peronea ferrugana* was readily disturbed by the beating stick, many of the specimens, though in perfect condition, having the ground colour white, the brown markings standing out strongly in contrast. On April 8th some scattered birch trees at Loch Ussie, Strathpeffer, yielded *Eriocrania semipurpurella*, in addition to the species already mentioned; and *Lita aethiops* was beaten from a gorse bush amongst the heather in the same locality.

The next noteworthy day was June 27th, when, at Kineraig, Invergordon, *Pyrodes rhediella* was beaten from a plum-tree, *Gracilaria alchimiella* from oak, and *Ornix scoticella* from mountain-ash. *Phylloporia bistrigella* was taken amongst some small birch bushes, *Lithocolletis emberizaepennella* was disturbed from honeysuckle, and *L. quinqueguttella* was locally common beside some low-growing willow [*Salix repens* (?)] amongst the heather and grass at the edge of a bog. Other *Lithocolletidae* occurring in the neighbourhood of Swordale (Evanton) were *L. caledoniella*, Sta., taken in a birch wood on June 26th; *L. pomifoliella*,\* reared in May, 1910, from mines in hawthorn leaves collected the previous autumn; *L. kleemannella* and *L. froelichiella*, reared in 1911, from mines in alder leaves taken in October, 1910; and *L. spinolella*, which in early July (along with *Teleia notatella*) frequented some small bushes of *Salix caprea* growing on the banks of a moorland burn.

One of the most interesting localities in this neighbourhood is Nigg Sutor, a high rocky promontory at the north side of the entrance to the Cromarty Firth. Here, between the precipitous cliffs, are dry grassy slopes covered with *Helianthemum vulgare* and other low growing plants. These are the haunts of *Aricia astrarche* var. *artaxerxes*, which I took in fair abundance flying over its foodplant on July 9th, a hot sunny day. The specimens were in good condition and exhibited considerable variation in the number and size of the marginal spots on the wings on the upper-surface, and in the presence or absence of a black central dot in the white spots on the underside of the wings. One ♂ specimen had the ground colour of the upper surface

\* Most probably *L. oxyacanthae*, Frey. See *Ent. Mo. Mag.*, 1899, p. 250.—A.S.

of the wings a very dark brown, the white discal dot much reduced in size, the marginal spots absent on the forewings but present as four inconspicuous red crescents towards the anal angle on the hindwings. On the undersurface the white spots were centred with black. One very handsome ♀ specimen had the marginal dots on the upperside of the forewings reduced to four scarcely discernible dots of red, the white discal spot conspicuous, and a white shading (most noticeable at the apex of the forewings) all round the outer margin of the anterior and posterior wings. In this specimen the white spots on the underside were distinctly dark centred. (Later, on August 8th, I took a few worn specimens of *A. astrarche* var. *arta.verves* at Tarbat Ness, also on *Helianthemum*-covered slopes by the sea.) Other species of interest taken at Nigg Sutor on July 9th, were *Scoparia dubitalis*, *Elachista argentella*, Clerk (*cygnipennella*, Hb.), *Micropteryx seppella*, *Lita marmorea*, and *L. leucomelanella*—the last beaten from a tuft of *Silene maritima* growing in a crevice in the rock. About six weeks later, on August 17th, *Gnophos obscurata* was fairly abundant in this locality. Two of the specimens captured were infested with about half a dozen small red parasites, larval *Trombidiidae*, whose head parts were buried amongst the scales of the moth's thorax. *Lita vicinella*\* was another interesting species taken on the same day amongst the herbage on the steep slopes by the sea.

Other *Gelechiidae* observed in Ross-shire last summer were: At Swordale, *Lita maculiferella*, resting on lichen-covered oak trunks on April 9th; *L. acuminatella*, taken on July 30th; *Bryotropha terrella*, abundant amongst grass during June and July; *Monochroa tenebrella*, beaten from herbage on a roadside on July 5th; *Brachycrossata cinerella*, taken amongst grass on July 28th; and in other localities, *Gelechia mulinella*, beaten from whin at Tarbat Ness on August 8th; and *Teleia docecella*, beaten from Scotch fir near Strathpeffer on July 19th.

During July I spent one or two interesting days amongst the lepidoptera of the mountain districts. One of the more successful of these was the 3rd, when I made the ascent of a round topped mountain about 2,000 feet high, near Ben Wyvis. The marshy spots on the moor at a lower elevation were frequented by *Elachista rhynchosporella* (*albidella*) and *E. kilimmella*. The latter was very common and was observed on subsequent occasions up to the beginning of August. A short distance from the summit of the mountain, the bushy heather of the more sheltered slopes gave place to a dwarfed variety, which scarcely raised a shoot amongst the encircling moss and lichen, while the cloud-berry—*Rubus chamaemorus*—(on whose leaves the larvæ of *Heterognomon* (*Tortrix*) *riburniana* were feeding) was supplanted by trailing shoots of *Arctostaphylos alpina*. Just here I netted a specimen of *Psodos coracina* that was flying low over the ground, and a little later, though the sun was clouded and a cold wind was blowing, a second specimen was noticed fluttering over the moss. A cold half-hour of unsuccessful search ensued; but at 5.30 the sun shone out again, and two more specimens made their appearance. Another interesting species taken in this neighbourhood was *Pachnobia hyperborea*, a beautiful specimen

\* Banks (*Ent. Mo. Mag.*, 1909, p. 263) shews *L. vicinella* to be a pale ab. of *L. leucomelanella*.—A.S.

of which was observed on July 30th resting on the bare peat beneath an overhanging bank of heather, at the low elevation of about 1,700 ft. The forewings of this specimen are purplish grey, with the markings distinct in blackish brown, the reniform stigma tinged with chestnut brown. On the orbicular stigma and on the dorsal margin are blotches of greyish-white bloom. About ten days later (on July 14th) I again came across *Psodos coracina*, this time flying actively in the sunshine on the summit of Sgurr na Lappaich, a mountain 3,400 ft. high, near Loch Affric, Inverness-shire. Rising rather abruptly to nearly 3,000 ft. above the level of the Loch, this mountain afforded a variety of interesting collecting grounds—near the foot, long slopes of heather; higher up, steep grassy sides; and at the summit, a limited area of strong moss-grown ground. Therefore, on making its ascent, it was interesting to note the successive zones of Lepidopterous fauna—*Udaria caesiata* and *Mixodia schulziana* being the only species observed, whose range extended from the foot to the summit. Thus, typical of the lower slopes were *Argynnis aglaia*, *A. selene*, *Coenonympha typhon*, *Emmelesia minorata*, and *Crambus ericellus*, the two latter very common and readily disturbed from the heather on one's approach. At a higher elevation *Tortrix riburniana* appeared frequenting a stretch of boggy moorland. When the steep grassy slopes were reached, I captured several specimens of *Emmelesia adaequata* (*blandiata*), which appeared to take the place of *E. minorata* at this elevation. *Coenonympha typhon* still lingered in the marshy spots which were frequented also by *Scopula alpinalis*, a species that became increasingly abundant as the ascent was continued. Higher up, beneath a patch of quickly melting snow, *Crambus furcatellus* was trodden up from the grass, and from the *Vaccinium myrtillus*, that grew abundantly on the mountain side above the snow-drift, *Sericoris irriguana* was disturbed. After a further climb, during which a specimen of *Herbula cespitalis* was captured, I at length reached the cairn, and here *Mixodia schulziana*, *Sericoris irriguana*, *Crambus furcatellus*, *Scopula alpinalis*, and *Larentia caesiata* flitted about over the moss beneath a blazing sun.

Glen Affric also proved very prolific of Lepidoptera during these sunny days in early July. One of these, the 12th, I spent in the birch woods, carpeted with whortleberry, on the hills around Loch Benevian, and obtained, amongst other species, *Halia brunneata* and *Phloxopteryx* (*Ancylys*) *uncana* (both in abundance), *Gelechia galbanella*, and *Coleophora nigricella*. Amongst the heather and rushes near the Loch, I took a worn specimen of *Diacrisia sanio* (*Nemophilina russula*). Collecting on the grassy banks along the river Affric's side and amongst the birch trees which clothe the lower part of the Glen near Fasnakyle, I obtained the following species:—On July 8th, *Macaria notata*, *Odezia atrata*, and *Sericoris urticana*; on July 11th, *Penthina corticana* (*picana*), *Ephippiphora trigeminana*, *Grapholitha nigromaculana*, and *Leioptilus tephrodactyla*; on July 13th, *Phibalapteryx vittata* (*lignata*), and *Chrysoclista schranckella*, the latter was taken again at Conon, Ross-shire, on August 3rd.

About this time I spent some interesting days amongst the birch woods of Ross-shire; the most noteworthy of these was July 20th, when I visited the Rogie Falls, near Strathpeffer. Here, amongst other species, *Penthina betulaetana*, *Paedisca bilunana*, *Grapholitha*

*ramella*, *Scoparia crataegella*, *S. ambigualis*, and *Argyresthia retinella* were taken resting on the trunks of the birch trees, their uniform tints of grey and white harmonising well with the colour of the bark. *Gelechia galbanella* and *Oecophora flavifrontella* were beaten from the branches; *Coleophora lutipennella* was taken in a small tract of oak wood, and *Halia brunneata* and *Phoxopteryx unca* were disturbed from the *Vaccinium myrtillus*, which clothed the hillsides. Later on in this locality, on August 16th, *Argyresthia arceuthina* abounded amongst the juniper, *Batrachedra praeangusta* was beaten from the branches of some aspen trees, and *Tachyptilia populella* swarmed on the trunks. At Loch Achelty, also in this district, on August 1st, *Acidalia inornata* and *Tinea semifulvella* were captured; and later, on August 20th, *Paedisca ratzeburgiana* and *Coccyx ustomaculana* were obtained in this locality. Further west, at the Conon Falls, on August 12th, I beat three specimens of *Orthosia suspecta* from the birch trees. Their forewings had the ground colour of a uniform purplish brown, the transverse lines in grey, the reniform and orbicular stigmata distinct, and outlined in whitish grey.

Perhaps the most interesting insect I took last year was *Dioryctria splendidella*, a perfect specimen of which I noticed resting on the wall of a room at Swordale, on September 24th. It may either have entered at the window, near which some spruce fir trees were growing, or it may have been introduced along with some cones of the same tree taken in a neighbouring locality. Prof. J. J. F. X. King, F.E.S., has kindly confirmed its identification. My thanks are also due to him for his help in the naming of many of the other species mentioned in these notes.

Last autumn a number of moths were taken at the lantern at Tarbat Ness Lighthouse, amongst which were one specimen of *Agrotis cursoria* and one of *Agrotis lucerneae*. The former has the ground colour of the forewings yellow ochreous, the transverse lines and stigmata distinct, the orbicular and reniform ringed internally with pale ochreous, externally with brown. The latter is a rather light example of var. *renigera*, St., in which the first line is edged inside and the second line outside, with pale grey.

In conclusion I should like to mention *Zelleria hepariella*, beaten from ash near Inchindown, Ross-shire, on September 15th; and the following species all taken during 1910, in the neighbourhood of Swordale; *Taenioctampa pulverulenta (cruda)*, reared in the end of March; *Emmelesia taeniata*, beaten from bushes in a wooded valley on July 30th; *Diptyopteryx bergmanniana*, captured on July 28th; *Clepsis rusticana*, reared on June 14th from larvæ on mountain ash taken in October, 1909; *Retinia pinivorana*, beaten from some young pine trees on July 17th; *Trifurcula immundella*, taken on July 20th; *Scardia cloacella*, on August 15th; *Oecophora stipella*, L. (*similella*, Sta.), beaten from a pine tree on August 9th; *Elachista obscurella*, taken amongst grass on August 13th; and *Acompsia fuscescens*, an abundant insect about the house in the end of July and the beginning of August.

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